UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,056	10/28/2003	David B. Lection	RSW920030183US1	5961

23550 7590 12/12/2007

HOFFMAN WARNICK & D'ALESSANDRO, LLC
75 STATE STREET
14TH FLOOR
ALBANY, NY 12207

EXAMINER	
ZHE, MENG YAO	

ART UNIT	PAPER NUMBER
2195	

NOTIFICATION DATE	DELIVERY MODE
12/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hwdpatents.com

Office Action Summary	Application No.	Applicant(s)	
	10/695,056	LECTION ET AL.	
	Examiner	Art Unit	
	MengYao Zhe	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-23 are presented for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim languages are unclear and indefinite:

i) Claim 1, it is uncertain what exactly constitutes as performance improvement <i.e. is the invention trying to anticipate how much faster the lagging process would finish executing if resources are allocated to it?>

ii) Claim 3, it is unclear what is meant by "a most responsive process" <i.e. what does it mean for a process to be responsive? Is it a lagging process that will speed up its execution the most out of all others should additional resources be given to it?>

Claim 8 has the same deficiencies as claim 3 above.

iii) Claim 7, it is uncertain what a learned benefit knowledge is <i.e. is it the amount of improvements previous lagging process had after receiving a set amount of resources?>

Claims 16 and 21 have the same deficiencies as claim 7 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aman et al., Patent No. 5,473,773 (hereafter Aman) in view of Hirata et al., Patent No. 6,665,716 (hereafter Hirata).

6. As per claim 1, Aman teaches a method of managing processes, the method comprising:

determining a set of available resources (Column 3, lines 1-17; Column 4, lines 14-20);

determining an anticipated benefit for the set of available resources for each process unable to meet its goal (Column 2, lines 29-30, 36-50; Column 3, lines 27-32), the anticipated benefit for each process including an anticipated performance improvement to the process should the set of available resources be allocated as additional resources for the process (Column 3, lines 45-48; Column 4, lines 19-33);

writing the anticipated benefit for each process to a recordable medium (Column 4, lines 33-36: it is inherent that the result of anticipated benefit is saved in a register so that allocation decisions can be made).

Aman teaches that a variety of performance goals may be chosen (Column 2, lines 48-50), so he does not specifically teach that the performance goal may be meeting deadlines. Therefore, Aman does not specifically teach determining a set of lagging processes, each lagging process running behind a target schedule;

However, Hirata teaches a method of determining a set of lagging processes, each lagging process running behind a target schedule for the purpose of improving the performance of the identified lagging process (Abstract, lines 1-5; Column 25, lines 34-39; Column 26, lines 45-50);

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to combine the teachings of Aman—a method of calculating anticipated benefit of allocating additional resources to process that are unable to meet their goals—with the specifics of the goal being meeting deadlines, so that processes that are unable to meet deadlines or in other words, lagging processes, are determined,

as taught by Hirata, because it allows for performance improvement of lagging processes.

7. As per claim 2, Hirata teaches further comprising allocating the set of available resources to at least one of the set of lagging processes (Column 25, lines 34-39). Aman teaches allocation of resources based on the anticipated benefit (Column 4, lines 34-37).

8. As per claim 3, Aman teaches wherein the at least one of the set of lagging processes comprises a most responsive process for the set of available resources (Column 4, lines 25-32; Column 4, lines 49-50; Column 5, lines 50-55).

9. As per claim 4, Aman teaches executing each process using its allocated resources (Column 2, lines 26-30; Column 8, lines 18-20).

10. As per claim 5, Aman teaches reallocating a resource allocated to an accelerated process to one of the set of lagging processes (Column 4, lines 25-33).

11. As per claim 6, Aman teaches allocating the set of available resources to an accelerated process, wherein the accelerated process comprises a most responsive process for the set of available resources (Column 4, lines 25-32; Column 4, lines 49-50; Column 5, lines 50-55, 57-60).

12. Claims 7-10, 13-19, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aman et al., Patent No. 5,473,773 (hereafter Aman) in view of Freund, Patent No. 6,076,174 (hereafter Freund)

13. As per claims 7, 16, 19, 21, 22, Aman teaches a method of managing processes, the method comprising:

determining a set of available resources (Column 3, lines 1-17; Column 4, lines 14-20);

determining an anticipated benefit for the set of available resources for each process, each process executing on a computer system, the anticipated benefit for each process including an anticipated performance improvement to the process should the set of available resources be allocated as additional resources for the process (Column 3, lines 45-48; Column 4, lines 19-33),

allocating at least some of the set of available resources to a process based on the anticipated benefits (Column 25, lines 34-39).

Aman does not specifically teach a learned benefit knowledge including information on at least one previous allocation of resources for each process.

However, Freund teaches a Performance characteristic database that collects benefit knowledge including information on at least one previous allocation of resources for each process for the purpose of assisting the task performance predictor in making its decisions (Column 3, lines 22-33; Column 4, lines 8-15; Column 5, lines 20-26).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to modify the teachings of Aman with using benefit knowledge, as taught by Freund, because it can assist the task performance predictor in making its decisions.

14. As per claims 8, 17, Aman teaches wherein the process comprises a most responsive process for the set of available resources (Column 4, lines 25-32; Column 4, lines 49-50; Column 5, lines 50-55).

15. As per claim 9, Fruend teaches a system that has the ability to anticipate execution time of a task depending on learned knowledge such as objects that describes task execution time and resource allocation dependencies (Column 3, lines 30-38, 45-51, 58-67).

Freund does not specifically teach determining an anticipated time savings for each process based on the anticipated benefit and a desired execution period.

However, it would have been obvious to one having ordinary skill in the art to see that the system taught by Fruend has the ability to determine an anticipated time savings depending on what resources or machines are allocated to what task since Freund's invention has the ability to keep track average performance data for each machine.

16. As per claim 10, Aman teaches wherein a plurality of the processes comprise sub-processes of a first process, further comprising determining a performance benefit for the first process (Column 2, lines 29-30).

17. As per claims 13, 18, 23, Aman teaches allocating a set of required resources to each process; and executing each process using the allocated resources (Column 25, lines 34-39).

18. As per claim 14, Aman in view of Freund does not specifically teach providing an execution result and a lag time of a first process to a second process, the lag time indicating a difference between an actual execution time and a desired execution period

for the first process, wherein the second process requires the first process to complete execution before starting to execute.

However, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to have a task dependency structure where one task may not execute unless the other task completes, and calculate the lag time between the two for further analysis in order to minimize lag time.

19. As per claim 15, Aman teaches wherein the allocating step is further based on a minimum amount of the set of available resources that is required for the anticipated benefit (Column 4, lines 19-33).

20. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aman et al., Patent No. 5,473,773 (hereafter Aman) in view of Freund, Patent No. 6,076,174 (hereafter Freund) further in view of Hirata et al., Patent No. 6,665,716 (hereafter Hirata).

21. As per claim 11, Aman in view of Freund does not specifically teach determining a set of lagging processes. However, Hirata teaches a method of determining a set of lagging processes, each lagging process running behind a target schedule for the

purpose of specifically improving the performance of the identified lagging process (Abstract, lines 1-5; Column 25, lines 34-39; Column 26, lines 45-50);

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to combine the teachings of Aman in view of Freund with determining a set of lagging processes, as taught by Hirata, because it allows for performance improvement of lagging processes specifically.

22. As per claim 12, Aman teaches wherein the allocating step includes allocating at least some of the set of available resources to at least one of the set of lagging processes based on the anticipated benefits for the set of lagging processes (Column 25, lines 34-39).

23. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aman et al., Patent No. 5,473,773 (hereafter Aman) in view of Freund, Patent No. 6,076,174 (hereafter Freund) further in view of Delp et al., Patent No. 5,996,013 (hereafter Delp)

24. As per claim 20, Aman in view of Freund does not specifically teach wherein each entry in the set of entries includes a relative performance change and a corresponding set of additional resources.

However, Delp teaches a resource allocator that stores the information of resource quantities allocated to previous requests for the purpose of reusing the information for the next resource allocation decision (Column 2, lines 43-64).

It would have been obvious to one having ordinary skill in the art the time of the applicant's invention to modify the teachings of using a performance characteristic database to anticipate allocation benefit, as taught by Aman in view of Freund, with the specifics of storing the amount of resources allocated, as taught by Delp, such that each entry in the data base contains both a relative performance change and a corresponding set of additional resources, for the purpose of reusing this information for the next resource allocation decision.

Response to Arguments

25. Applicant's argument filed on 9/24/2007 regarding to claims 1-23 have been fully considered, but they are moot in view of the new ground of rejection.

Conclusion

26. Applicants' amendments necessitated the new grounds of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MengYao Zhe whose telephone number is 571-272-6946. The examiner can normally be reached on Monday Through Friday, 10:00 - 8:00 EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached at 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100